REMARKS

Applicants' attorney is appreciative of the interview granted by Examiners Vu and Wong to the undersigned and to Applicants' representative Deborah Gador on February 14, 2007. At that interview, extensive discussions were carried out relating to the definition of "services" according to the present application, and the differences between that definition and the concept of services in the prior art references.

Claims 4-19 have been rejected under 35 USC 112, 2nd paragraph, on the basis of the term "an appropriate service network" in claims 4, 14 and 18. This term has been changed to "a network associated with the service type" to clarify the meaning, and withdrawal of this rejection is requested.

Claims 4 and 6 have been rejected under 35 USC 103(a) over Tiernan et al in view of Jasen et al and Ku et al. In addition, Claim 5 has been rejected under 35 USC 103(a) over Tiernan et al in view of Farhan et al, and claims 7-9 have been rejected under 35 USC 103(a) over Tiernan et al in view of Ho.

Claims 10-19 have been found to be allowable over the art.

The invention is directed to a system for packet formation and processing for data transmission over an optical fiber. According to the invention, a system is provided for forming a novel type of packet, which can act like a conventional packet for transmission and routing purposes, but which holds inside material of at least two different services, in their native or original protocols.

As discussed in the interview, confusion arose as to the nature of the inventive concept, due to the existence of a number of definitions of "services." The services of the

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present invention, for example, TDM, ATM, Ethernet, Fibre Channel, PDH, and Frame Relay, are known as *native* services and are defined by their bit rate and protocol structure. Additional examples of native services, each having its own bit rate and protocol, are set forth in the Wikipedia definition of Pseudowire (PW) (attached hereto), as follows: "PW is an emulation of a native service over a Packet Switched Network (PSN). The native service may be ATM, Frame Relay, Ethernet, low-rate TDM, or SONET/SDH while the PSN may be MPLS, IP (either IPv4 or IPv6), or L2TPv3." Thus, Applicants' usage of the term "services" is well known in the art.

At present, each of these types of services has its own protocol and requires its own network, because there is no known method of mixing, for example, ATM with TDM for transmission together in their original protocols. Instead, if different services are to be transmitted together, one or both must be converted or transformed to a new protocol.

The invention is directed to a system for mixing these different types of services, in their original protocols, without conversion or transformation, for transmission together in a single packet. Such a system is not taught or suggested in any of the prior art cited in the Office Action or known to the Applicants.

Claims 4 and 18 have been amended to more clearly define the relevant services and to indicate that at least two such services, in their native form, are combined into a single packet.

The Office Action alleges that Tiernan et al discloses collecting services data in their original protocols, which are interpreted as being video, audio or other coded bitstream.

However, as described above, and as claimed in amended claims 4 and 18, the term "services" as used in the present claims does not include video and audio, *which are not services according to the definition*. Rather, the video, audio and data streams of Tiernan et al fall under the definition of video or audio services, which are not native services as defined according to the invention, and which must be mapped to another protocol to be transported over a telecom network. Accordingly, Tiernan et al is directed to transmission of *a single service*, and not a plurality of services, as defined in the claimed invention.

Jasen et al describes a method of prioritizing network services. One mode of prioritization involves tagging network traffic messages or packets with QoS information in their TCP/IP header (paragraph [0029]). Jasen et al do not, however, teach or suggest processing different data services in their original protocols into packets.

The invention, on the other hand, utilizes a tag to identify a source and destination which, in effect, indicate the type of service (i.e., TDM services come from and go to a TDM network). The use of a tag is not being claimed *per se,* but only in connection with the novel method of claim 4 or claim 18, and conventional tags, such as MPLS tags, can be utilized in the invention.

Ku et al also refers to only one type of services data, specifically packet-based services, which are switched (not transmitted) via a switch, operating as a store-and-forward device, the packets being mapped onto discrete time slots. Paragraphs [0004] to [0010] of Ku provide a very good discussion of the different types of services and the difficulties of combining them together. His solution involves switching, not transmission, and does not include multiplexing

the services. Thus, Ku does not teach or suggest combining data services of different types for transmittal together, as presently claimed.

Farhan et al has been cited for a disclosure of an optical transceiver including at least one wavelength specific laser. Applicants are not claiming optical transceivers, *per se*, but only in the context of amended claims 4 and 18.
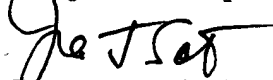
Similarly, Ho has been cited for a disclosure of encapsulating tagged packets into PPP packets, but Applicants are not claiming encapsulating tagged packets into PPP packets, *per se*, but only in the context of amended claims 4 and 18.

Withdrawal of these rejections is requested.

New claim 20 has been added to the application. Claim 20 is generally of the scope of original claim 1, in which corrections have been made in accordance with the discussion with the Examiners in the interview. The detailed recitations of the aggregator as claimed in amended claim 4 have been omitted.

In view of the foregoing amendments and remarks, Applicants submit that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,

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:Pseudo-wire

From Wikipedia, the free encyclopedia
(Redirected from Pseudowire)

In computer networking and telecommunications, a **Pseudowire** (PW) is an emulation of a native service over a Packet Switched Network (PSN). The native service may be ATM, Frame Relay, Ethernet, low-rate TDM, or SONET/SDH, while the PSN may be MPLS, IP (either IPv4 or IPv6), or L2TPv3.

The PW emulates the operation of a "transparent wire" carrying the native service, but it is realized that this emulation will rarely be perfect.

The first PW specifications were the Martini draft for ATM PWs, and the TDMoIP draft for transport of E1/T1 over IP.

In 2001, the IETF set up the PWE3 working group, which was chartered to develop an architecture for service provider edge-to-edge PWs, and service-specific documents detailing the encapsulation techniques. Other standardization forums, including the ITU and the MFA Forum, are also active in producing standards and implementation agreements for PWs.

There are now many PW standards, the most important of which are IETF RFCs 3985 (PWE architecture), 4447 (PWE control protocol), 4448 (Ethernet PW), and 4553 (SAToP TDM PW), as well as ITU-T Y.1411 through Y.1415, Y.1452 and Y.1453 (ATM, TDM, voice services, and Ethernet PWs), and X.84 (frame relay PW).

External link

- http://www.ietf.org/html.charters/pwe3-charter.html

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Category: Network architecture

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